This pedestal heater design is ideal for heating large 450mm wafers inside of vacuum process chambers. The part is manufactured using our proprietary low pressure permanent mold casting process with electrical heater elements “Cast-in.” An electron beam welding process joins an aluminum 6061 shaft to the cast aluminum 356 body to provide an electrical feed-through for electrical connections. The final assembly is precision machined into a wafer pedestal heater. Following a full inspection and cleaning, the part is complete and ready to install. Our base design and manufacturing processes can be modified to meet specific requirements, including customized machining, coatings and assembly. Cast Aluminum Solutions has over 20 years of experience in the design and manufacture of pedestal heaters and we are a qualified supplier to many of the leading semiconductor equipment manufacturers worldwide.

APPLIEDS

Semiconductor processing  Semiconductor research and development

FEATURES AND BENEFITS

Aluminum material
Excellent thermal characteristics and good compatibility with most process environments
Available with hardcoat anodize finish for better abrasion and corrosion resistance

Electron beam welded construction
In-chamber heating solution for high vacuum

Two tubular heater elements “Cast-in”
Independently controllable inner and outer heater elements allow customized temperature profiles, thermocouple sensors are included

Precision machined part
Meets industry standards for dimensional tolerances and surface finishes

World class performance
“Cast-in” reliability assures long product life
Operating temperatures up to 400°C for a wide range of applications
Temperature uniformity of ± 0.5% of set point based on initial FEA (finite element analysis)
450mm Aluminum Pedestal Heater

FRONT-END PROCESS HEATING SOLUTION FOR 450mm WAFER FABRICATION

DIMENSIONS

TEMPERATURE UNIFORMITY

An initial Finite Element Analysis (FEA) optimization for temperature uniformity shows a predicted performance of better than ±0.5% of set point on the wafer as modeled in our vacuum chamber.

Cast Aluminum Solutions is using additional FEA iterations in combination with product testing to further improve thermal performance.

CONTACT US
Our team of sales engineers, account managers and customer service professionals strive to achieve total customer satisfaction and we welcome the opportunity to serve you.

SPECIFICATIONS
Material: Aluminum 356
Surface flatness: 0.013 mm (.0005 in)
Power: 7000 Watts total at 208 Volts
Temperature uniformity: ± 0.5% of set point (FEA predicted)
Cleaning: Ultrasonic wash followed by IPA wipe

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